

CHAPTER 7 CAST-IN-PLACE CONCRETE

SIFC-701 GENERAL

SIFC-701.1 Scope. The requirements of this chapter and IBC-1704.4 shall apply when construction includes cast-in-place concrete as listed in SIFC-302.3.

SIFC-701.2 Construction loads. The **GC** shall coordinate construction operations so that at all times the dead loads, live loads, and construction loads delivered to the building shall be within the capacity of the building to carry such loads. In addition, no structural loads shall be imposed on any vertical load carrying member which is less than seven days old unless the concrete strength criteria established by the **SER** for carrying such loads is satisfied.

SIFC-701.3 Posting of concrete pour schedule. As construction proceeds, the **GC** shall post the updated concrete pour schedule, which shall indicate building floor level, pour number, and date of pour, on the door of the **GC's** field office. This schedule will be used, in case of fire, by the Fairfax County Fire and Rescue Department.

SIFC-702 FABRICATION AND ERECTION DOCUMENTS

SIFC-702.1 Review and approval. The cast-in-place concrete fabrication and erection documents, including concrete mix designs, shall be submitted for review and approval to the **SER** and to **FCCSS** prior to concrete construction and/or formwork erection, as appropriate. The **GC** shall submit two sets of **SER**-approved fabrication and erection documents to **FCCSS** for approval. After County review and approval, **FCCSS** will return one set of County-approved fabrication and erection documents for use on the job site. County-approved documents shall be used by the **SIER** to conduct special inspections during construction.

Exceptions:

1. **FCCSS** approval is not required for non-prestressed mild steel reinforcement. One set of **SER**-approved fabrication and erection documents shall be submitted to **FCCSS** for record purposes.
2. **FCCSS** approval is not required for concrete formwork as exempted in SIFC-702.3.a.

SIFC-702.2 Seal and signature requirements. The following fabrication and erection documents shall be prepared, signed and sealed by **RDPs**:

- Concrete formwork and shoring designs required by SIFC-702.3.
- Concrete formwork stripping and reshoring schedules required by SIFC-702.3.
- Prestressing steel to be post-tensioned.

SIFC-702.3 Formwork design requirements. A **RDP** with experience in the design of formwork and shoring shall prepare, sign and seal fabrication and erection documents, including calculations, specifying formwork and shoring requirements, stripping criteria, and reshoring procedures for structural concrete slabs, beams, walls, and columns, except as exempted in SIFC-702.3.a. The fabrication and erection documents shall indicate formwork system requirements, including construction schedules, shoring design and layout, shoring removal,

and reshoring requirements. The design shall include the construction loads to be delivered to the building during construction and shall indicate the strengths of the building elements assumed for formwork and shoring designs, and stripping and reshoring schedules.

a. Walls and columns. Unless required by project specifications or the **SER**, formwork design for walls and columns is only required for walls in excess of 10 feet in height, columns in excess of 15 feet in height, or walls and columns whose formwork supports scaffolding at heights greater than 10 feet above any surrounding surface. Stripping requirements do not apply to walls and columns of any height unless such elements will carry loads other than their own weight at time of stripping or unless required by project specifications or the **SER**.

b. Composite construction. Shoring for composite slabs and/or beams shall be designed to meet the **SER**'s requirements.

SIFC-702.4 SER review and approval. Prior to concrete construction and/or formwork erection, as appropriate, the fabrication and erection documents listed below shall be reviewed and approved by the **SER**:

- Concrete formwork and shoring designs required by SIFC-702.3: for compatibility with the County-approved structural construction documents and for construction loads delivered to the building.
- Concrete stripping and reshoring designs and schedules required by SIFC-702.3: to verify the capacity of the building components, exclusive of the formwork, to carry the construction loads.
- Non-prestressed mild steel reinforcement.
- Prestressing steel to be post-tensioned.
- Concrete mix designs, including any accelerators or other admixtures, for each class of concrete to be used. **SER** Approval shall include the following language:

"I have reviewed the concrete mix designs as prepared by (company) for the above referenced project. My review and approval or approval as noted, dated (date), included review and approval of the concrete mix designs (list), including any accelerators or other admixtures, for each class of concrete to be used, for compliance with project requirements."

SIFC-703 INSPECTIONS

SIFC-703.1 Special inspections. The **SIER** shall perform special inspections in accordance with this chapter, IBC-1704.4 and IBC-Table 1704.4 as amended by VUSBC. IBC-Table 1704.4 Item 2, *Reinforcing steel welding* requires continuous or periodic inspection, depending upon the use of the reinforcing steel. (see SIFC-604.2 and IBC-Table 1704.3 Item 5b). IBC-Table 1704.4 Item 11, *Formwork and shoring* requires periodic special inspection.

IBC-1704.4.1 Materials. In the absence of sufficient data or documentation providing evidence of conformance to quality standards for materials in Chapter 3 of ACI 318, the building official shall require testing of materials in accordance with the appropriate standards and criteria for the material in Chapter 3 of ACI 318. Weldability of reinforcement, except that which conforms to ASTM A 706, shall be determined in accordance with the requirements of Section 1903.5.2.

IBC-TABLE 1704.4
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD ^a	IBC REFERENCE
1. Inspection of reinforcing steel, including prestressing tendons, and placement.	—	X	ACI 318: 3.5, 7.1-7.7	1903.5, 1907.1,1907.7 1914.4
2. Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5B.	—	—	AWS D1.4 ACI 318: 3.5.2	1903.5.2
3. Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased.	X	—	—	1912.5
4. Verifying use of required design mix.	—	X	ACI 318: Ch. 4, 5.2-5.4	1904, 1905.2-1905.4 1914.2,1914.3
5. Sampling fresh concrete and performing slump, air content and determining the temperature of fresh concrete at the time of making specimens for strength tests.	X	—	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1905.6, 1914.10
6. Inspection of concrete and shotcrete placement for proper application techniques.	X	—	ACI 318: 5.9, 5.10	1905.9, 1905.10, 1914.6,1914.7 1914.8
7. Inspection for maintenance of specified curing temperature and techniques.	—	X	ACI 318: 5.11-5.13	1905.11, 1905.13, 1914.9
8. Inspection of prestressed concrete:				
a. Application of prestressing forces.	X		ACI 318: 18.18	—
b. Grouting of bonded prestressing tendons in the seismic-force-resisting system.	X	—	ACI 318: 18.16.4	
9. Erection of precast concrete members.	—	X	ACI 318: Ch. 16	—
10. Verification of in-situ concrete strength, prior to stressing of tendons in posttensioned concrete and prior to removal of shores and forms from beams and structural slabs.	—	X	ACI 318: 6.2	1906.2
11. Inspection of concrete formwork, shoring and re-shoring.	—	X	ACI 318: 6.1, 6.2	1906

a. Where applicable, see also Section 1707.1, Special inspection for seismic resistance.

SIFC-703.2 Particular Elements.

a. Concrete formwork. The **SIER** shall verify that the formwork materials, cleanliness, size, and installation conform to approved formwork fabrication and erection documents, prior to placement of concrete. Inspection reports shall be submitted to **FCCSS** within three working days of each inspection.

b. Reinforcing steel. The **SIER** shall verify that reinforcing steel is in compliance with County-approved construction documents and approved fabrication and erection documents, including welding of reinforcement of the structural seismic-force-resisting system.

c. Tendons to be post-tensioned. The **SIER** shall verify that tendons to be post-tensioned are in compliance with County-approved construction documents and approved fabrication and erection documents, including full-time monitoring of grouting, consolidation and reconsolidation of bonded prestressing tendons. Inspections shall include tendon size and strength, chair height, tendon profile, tendon snaking elimination, horizontal ties between chairs and condition of sheathing.

d. Stressing of tendons. The **SIER** shall verify that tendon stressing operations are in compliance with project specifications. Stressing of tendons shall not start before the specified minimum strength of field-cured test cylinders has been achieved and verified by the **SIER** and approved by the **SER**. Continuous monitoring of stressing of tendons is required. Elongation records shall be made and checked against project specifications. Tendon failures or tendon elongations not in compliance with project specifications shall be rejected and the **SER** shall make recommendations in writing for remedial actions.

e. Concrete. The **SIER** shall verify use of proper concrete design mix, monitor placement of concrete, and perform inspections and testing listed in IBC-Table 1704.4. Continuous monitoring shall be required at the point of discharge from trucks / batch plant, and at the point of deposit / consolidation of concrete.

f. Weldability of reinforcement. If steel reinforcement other than ASTM A 706 is to be welded, the **SIER** shall verify that the weldability of the reinforcement has been determined in accordance with IBC-1903.5.2.

g. Welding of reinforcement. Special inspection of welding of reinforcement is required in accordance with **both** IBC-Table 1704.4 Item 2 **and** IBC-Table 1704.3 Item 5B. Continuous monitoring of welding of reinforcing steel shall be provided where required by IBC-Table 1704.3 Item 5B.

SIFC-704 TESTING

Concrete shall be tested in accordance with IBC-1905.6 and this section.

IBC-1905.6 Evaluation and acceptance of concrete. The criteria for evaluation and acceptance of concrete shall be as specified in Sections 1905.6.2 through 1905.6.5.5.

IBC-1905.6.1 Qualified technicians. Concrete shall be tested in accordance with the requirements in Sections 1905.6.2 through 1905.6.5. Qualified field testing technicians shall perform tests on fresh concrete at the job site, prepare specimens required for curing under field conditions, prepare specimens required for testing in the laboratory, and record the temperature of the fresh concrete when preparing specimens for strength tests. Qualified laboratory technicians shall perform all required laboratory tests.

IBC-1905.6.2 Frequency of testing. The frequency of conducting strength tests of concrete shall be as specified in Sections 1905.6.2.1 through 1905.6.2.4.

IBC-1905.6.2.1 Minimum frequency. Samples for strength tests of each class of concrete placed each day shall be taken not less than once a day, nor less than once for each 150 cubic yards (115 m³) of concrete, nor less than once for each 5,000 square feet (465 m²) of surface area for slabs or walls.

IBC-1905.6.2.2 Minimum number. On a given project, if the total volume of concrete

is such that the frequency of testing required by Section 1905.6.2.1 would provide less than five strength tests for a given class of concrete, tests shall be made from at least five randomly selected batches or from each batch if fewer than five batches are used.

IBC-1905.6.2.3 Small volume. When the total volume of a given class of concrete is less than 50 cubic yards (38 m³), strength tests are not required when evidence of satisfactory strength is submitted to and approved by the building official.

IBC-1905.6.2.4 Strength test. A strength test shall be the average of the strengths of two cylinders made from the same sample of concrete and tested at 28 days or at the test age designated for the determination of f'_c .

IBC-1905.6.3 Laboratory-cured specimens. Laboratory-cured specimens shall comply with the provisions of Sections 1905.6.3.1 through 1905.6.3.4.

IBC-1905.6.3.1 Sampling. Samples for strength tests shall be taken in accordance with ASTM C 172.

IBC-1905.6.3.2 Cylinders. Cylinders for strength tests shall be molded and laboratory cured in accordance with ASTM C 31 and tested in accordance with ASTM C 39.

IBC-1905.6.3.3 Acceptance of results. The strength level of an individual class of concrete shall be considered satisfactory if both of the following requirements are met:

1. Every arithmetic average of any three consecutive strength tests equals or exceeds f'_c .
2. No individual strength test (average of two cylinders) falls below f'_c by more than 500 psi (3.45 MPa).

IBC-1905.6.3.4 Correction. If either of the requirements of Section 1905.6.3.3 are not met, steps shall be taken to increase the average of subsequent strength test results. The requirements of Section 1905.6.5 shall be observed if the requirement of Section 1905.6.3.3, Item 2 is not met.

IBC-1905.6.4 Field-cured specimens. Field-cured specimens shall comply with the provisions of Sections 1905.6.4.1 through 1905.6.4.4.

IBC-1905.6.4.1 When required. Where required by the building official, the results of strength tests of cylinders cured under field conditions shall be provided.

IBC-1905.6.4.2 Curing. Field-cured cylinders shall be cured under field conditions in accordance with ASTM C 31.

IBC-1905.6.4.3 Sampling. Field-cured test cylinders shall be molded at the same time and from the same samples as laboratory-cured test cylinders.

IBC-1905.6.4.4 Correction. Procedures for protecting and curing concrete shall be improved when the strength of field-cured cylinders at the test age designated for determination of f'_c is less than 85 percent of that of companion laboratory-cured cylinders. The 85 percent limitation shall not apply if the field-cured strength exceeds f'_c by more than 500 psi (3.45 MPa).

IBC-1905.6.5 Low-strength test results. The investigation of low-strength test results shall be in accordance with the provisions of Sections 1905.6.5.1 through 1905.6.5.5.

IBC-1905.6.5.1 Precaution. If any strength test (see Section 1905.6.2.4) of laboratory-cured cylinders falls below the specified value of f'_c by more than 500 psi (3.45 MPa) (see Section 1905.6.3.3, Item 2), or if tests of field-cured cylinders indicate deficiencies in protection and curing (see Section 1905.6.4.4), steps shall be taken to assure that the load-carrying capacity of the structure is not jeopardized.

IBC-1905.6.5.2 Core tests. If the likelihood of low-strength concrete is confirmed and calculations indicate that load-carrying capacity is significantly reduced, tests of cores drilled from the area in question in accordance with ASTM C 42 is permitted. In such cases, three cores shall be taken for each strength test more than 500 psi (3.45 MPa) below the specified value of f'_c .

IBC-1905.6.5.3 Condition of cores. If concrete in the structure will be dry under service conditions, cores shall be air dried at temperatures between 60°F (16°C) and 80°F (27°C) and relative humidity less than 60 percent for seven days before testing and shall be tested dry. If concrete in the structure will be more than superficially wet under service conditions, cores shall be immersed in water for at least 40 hours and be tested wet.

IBC-1905.6.5.4 Test results. Concrete in an area represented by core test shall be considered structurally adequate if the average of three cores is equal to at least 85 percent of f'_c and if no single core is less than 75 percent of f'_c . Additional testing of cores extracted from locations represented by erratic core strength results is permitted.

IBC-1905.6.5.5 Strength evaluation. If the criteria of Section 1905.6.5.4 are not met and if the structural adequacy remains in doubt, the building official is permitted to order a strength evaluation in accordance with ACI 318, Chapter 20, for the questionable portion of the structure, take other appropriate action.

SIFC-704.1 Testing required. Material tests for concrete properties and strength, for determining the compressive strength of concrete, prior to removal of concrete formwork and shoring, reshoring, stressing post-tensioning tendons, loading of vertical building elements, erection of structural steel, and for verifying adequacy of concrete protection and curing methods during cold weather, shall comply with the following:

a. Frequency of testing. Samples for strength tests of each class (concrete mix design) shall be taken in accordance with IBC-1905.6.2. Concrete samples for test cylinders shall be taken in accordance with ASTM C 172. Additional test cylinders for strength tests shall be cast if required by the **AR**, **SER**, or County-approved documents. Additional cylinders to be field-cured shall be required to evaluate strengths of concrete prior to removal of shores and concrete formwork, prior to stressing of post-tensioning tendons, loading of vertical building elements, erection of structural steel, and adequacy of concrete curing and protection methods during cold weather concreting conditions.

b. Laboratory-cured cylinders. Cylinders for strength tests shall comply with this section and IBC-1905.6.3. Cylinders for strength tests shall be cast, stored, transported and laboratory-cured in accordance with ASTM C 31. Tests shall be in accordance with ASTM C 39.

c. Field-cured cylinders. Field-cured cylinders, to evaluate strengths of concrete prior to removal of concrete formwork and shoring, reshoring, prior to stressing post-tensioning tendons, and to determine adequacy of curing and protection of concrete during cold

weather, shall comply with this section and IBC-1905.6.4. Field-cured cylinders shall be cured as closely as possible to the location of placement of the concrete pour they represent, and be exposed as nearly as possible to the same temperature and moisture environment, in accordance with ACI 318 and ASTM C 31. Tests shall be in accordance with ASTM C 39.

Cylinders may be fabricated on the ground or on the slab, and moved to the curing location no more than 30 minutes after fabrication. If fabricated on the ground, cylinders shall be placed in a temporary open storage location, protected by no more than insulated blankets, remain undisturbed for a minimum of 16 hours but no more than 24 hours after molding, and then be relocated into or on the structure as closely as is practicable to the concrete they represent. If molded on the slab, cylinders shall be placed into or on the structure as closely as is practicable to the concrete they represent immediately after molding.

Equivalency may be achieved by storing uncapped cylinders on or immediately adjacent to the structural concrete placement as soon as practical after casting (and until six hours or less prior to testing), and subjecting them to the same temperature and moisture loss controls as the structure itself. Test cylinders shall be protected from cold weather and cured in the same manner as the concrete they represent. Under no circumstances shall field-cured cylinders be subjected to a curing environment that is better than the concrete they represent, such as placement within a temperature and/or humidity controlled container.

SIFC-704.2 Low-strength concrete test results. Investigation of low-strength concrete shall be in accordance with IBC-1905.6.5 and this section. The following procedures shall apply when test results do not comply with the acceptance criteria of ACI 318 for concrete strength.

a. Submittal of data and recommendations to FCCSS. The **SIER** shall submit to **FCCSS** a copy of any records pertaining to under-strength concrete, with written recommendations of the **SER**.

b. Non-destructive testing. If non-destructive testing is recommended by the **SER** to confirm the existence or evaluate the in-situ strength of low-strength concrete, **FCCSS** will only accept testing by concrete cores obtained and tested in accordance with ASTM C 42 and conditioned in accordance with IBC-1905.6.5.3, or by penetration resistance in accordance with ASTM C 803 (Windsor Probes). The impact rebound hammer (Swiss Hammer or ASTM C 805) method of testing shall not be approved by **FCCSS**.

SIFC-705 CONCRETE FORMWORK: STRIPPING AND RESHORING

SIFC-705.1 FCCSS approval required. Specific **FCCSS** approval is required prior to removal of concrete formwork and shoring, and installation or removal of reshores. Requests for **FCCSS** approval shall be submitted in the form of stripping letters (see SIFC-705.3).

Exception: Stripping approval is not required for certain walls and/or columns, as listed in SIFC-702.3.a.

SIFC-705.2 Operations. Removal of shores, formwork stripping, and installation of reshores shall conform to the County-approved fabrication and erection documents and shall not commence until the **FCCSS**-approved stripping letter is on-site.

SIFC-705.3 Requests for formwork and shoring removal (stripping letter).

a. Preparation of stripping letter. The **SIER** shall initiate a stripping letter when concrete strengths have achieved the levels specified by the County-approved documents, requesting approval for removal of shores and formwork, and/or reshoring operations. This letter shall

contain the test results of the field-cured cylinders (and laboratory-cured cylinders when specified by the **SER**) molded for this purpose along with the stripping requirements stated in the County-approved documents. The stripping letter shall contain the original seal and signature of the **SIER**.

A stripping letter shall state that in-situ concrete strengths and conditions meet or exceed the project design specifications and design stripping criteria, and shall request approval to remove formwork and/or shoring. In the event of a deficiency, the **SER's** recommendations shall be included. Stripping letters shall also include the following:

- **"Design" data.** The project's requirements, including but not limited to the concrete mix design strength and concrete strength/time specifications for stripping, the formwork shoring, reshoring or stripping design criteria established by the **RDP** responsible for formwork and shoring design, and cold weather concreting methods.
- **"Actual" data.** The construction results attained for the particular stripping request, including but not limited to cold weather concreting temperature logs, concrete cylinder break tests, post-tensioning stressing records, and formwork shoring/reshoring data or calculations.

b. Approval of stripping letter. **FCCSS** approval of the stripping letter is required prior to shoring removal, stripping and reshoring operations. Possession of this County-approved stripping letter does not in any way relieve the **GC** of responsibility to evaluate the removal of formwork and shoring to determine if it is safe and appropriate to do so.

The stripping letter shall be reviewed and approved by the **SER** prior to submittal to **FCCSS**. Except for post-tensioned concrete construction, the **SER** may waive review of the stripping letter. Waiver of review constitutes **SER** approval of the stripping letter. The **SER** waiver of review shall be conveyed to **FCCSS** in writing prior to commencement of concrete placement for the project.

SIFC-705.4 Low-strength concrete. When field-cured concrete strength test results do not meet formwork and shoring removal requirements, the **RDP** who designed concrete formwork and shoring may review any additional available information and make a recommendation to the **SER** and to **FCCSS** to allow stripping to proceed, or to postpone stripping until specified concrete strengths are attained. **SER** approval and **FCCSS** approval is required.

SIFC-705.5 Elongation records. When structural members to be stripped are of post-tensioned design, elongation records shall be approved by the **SER** and shall be attached to the stripping letter. In the event that tendons are broken, elongations do not meet project specifications, or other deficiencies occur, the **RDP** who designed the post-tensioned tendons shall address the case and make a recommendation, for review and approval by both the **SER** and **FCCSS**.

SIFC-706 COLD WEATHER CONCRETING

SIFC-706.1 When required. The requirements of this section shall apply after three consecutive days of average daily temperatures below 40°F, or when the internal concrete temperature falls below 50°F during curing. The **GC** shall make specific provisions to continuously protect the concrete during cold weather periods. During periods when the average daily temperatures are intermittently above and below 40°F, provisions for protection, as needed, shall be available.

The **SIER** shall verify adherence to the following requirements:

- **Minimum temperature of concrete.** All concrete (slabs, columns, walls, beams, footings,

etc.) shall be maintained above 50°F and be kept moist during the first seven (7) days (or three (3) days if high-early strength concrete is used) after placement.

- **Maximum temperature in enclosures.** If the area is enclosed, the temperature in the enclosure shall be monitored so that it does not exceed 104°F, or as otherwise specified by the **SER**. Proper moisture levels shall be maintained at all times.
- **Environment of field-cured cylinders.** When cylinders are fabricated for acceptance testing, additional cylinders shall be made to be field-cured for purposes of determining adequacy of protection and curing (see IBC-1905.6.4). Field-cured concrete cylinders shall be cured in the identical environment, and the least favorable curing conditions, as the structural members they represent. Each set of field-cured cylinders shall remain in the exact curing environment of the structural members they represent for 100% of the minimum curing time required by the **SER** prior to transport to the approved testing laboratory for compressive strength testing.

SIFC-706.2 Temperature readings and records.

a. Temperature readings required. The **SIER** shall record ambient temperature, air temperature under slab (when applicable), and concrete temperatures at regular time intervals on all concrete until 72 cumulative hours of internal concrete temperatures above 50°F are achieved, or until the average ambient temperature rises above 40°F for more than three successive days. Temperature readings shall be taken by personnel of the **SIER**, using tamper-resistant devices. Concrete temperature readings shall be taken at a minimum of four locations along the edge of the slab being monitored. **FCCSS** may designate additional locations if the concrete pour is unusually large. Temperature readings and appropriate data shall be recorded on a temperature log sheet which shall be attached to each stripping letter to facilitate the review and approval of the stripping request.

b. Frequency. Periodic readings of temperatures are required to verify adequacy of curing and protection methods. During the season when temperatures are not within the “cold weather concreting” conditions, high and low readings of concrete temperatures shall be provided once for each 24-hour period. Such readings shall be labeled, “not cold weather”. During “cold weather concreting” conditions, the **SIER** shall monitor ambient temperature, air temperature under slab, and concrete temperatures at regular time intervals for the specified duration of temperature controlled curing. The concrete curing time begins when the last load of concrete is deposited into the formwork, with temperature monitoring beginning immediately after concrete placement and finishing is complete and continuing until the cumulative duration of satisfactory curing is achieved.

If instantaneous temperature readings only are recorded, there shall be not less than six recordings per 24-hour period (at 4 hour intervals). If there are less than six recordings per 24-hour period, recordings shall include the instantaneous temperature and also include both minimum-maximum temperatures reached during the previous recording period, with not less than two recordings per 24-hour period (12-hour intervals). In all cases, if the temperature reading(s) indicate a minimum concrete temperature below 50°F then that period of time between readings cannot be included in the required curing duration.

c. Use of automatic recorders. Automatic temperature monitoring and maturity metering devices may be used only to verify the temperature data required by SIFC-706.2.a.

SIFC-706.3 Testing of field-cured cylinders for curing. For cold-weather concreting, testing of field-cured cylinders is required, to verify adequacy of curing and protection measures. The testing shall be done at twenty-eight days or the time designated on the County-approved documents for determination of specified compressive strength of concrete, f'_c , if different from twenty-eight days. Cylinders cured in the field for purposes of determining formwork and shoring removal may be used to satisfy this requirement.

SIFC-707 COMPLETION OF CAST-IN-PLACE CONCRETE CONSTRUCTION

Upon completion of cast-in-place concrete construction, the **SIER** shall, after review and approval by the **SER**, submit a completion letter to **FCCSS** and shall indicate the date of completion on the final report of special inspections.

FORMWORK / SHORING STRIPPING / STRESSING FCCSS AUTHORIZATION REQUEST

PROJECT DATA:

Permit No. _____	Job File No. _____
Name _____	General Contr. _____
Address _____	Concrete Contr. _____

POUR DATA:

Mix Designation _____	Strength (psi) _____
Date & Time _____	Volume (cy) _____
Location _____	

STRIPPING DATA:

	Design/Required	Actual	Satisfactory/ Unsatisfactory
Age (hrs,days) and/or	_____	_____	_____
Avg. Temp (f) and/or	_____	_____	_____
Strength (psi)	_____	_____	_____

STRESSING DATA:

Concrete Strength	_____	_____	_____
Tendon Elongation	_____	_____	_____

ATTACHMENTS:

Key Plan	_____
Concrete Break Plan	_____
Stressing Record	_____
Temperature Log	_____
Stripping Criteria	_____
Stripping Authorization	_____
Other:	_____

NOTES:

Signature & Seal of Special Inspections Engineer of Record

COLD WEATHER CONCRETE SLAB TEMPERATURE LOG

PLACEMENT DATE:		PROJECT _____ PERMIT # _____						
		DESCRIPTION OF POUR _____						
FINISH TIME:		Station #1	Station #2	Station #3	Station #4	Air Temp Und Slab	Ambient Air Temp	Remarks
DAY 1	12 am							
	4 am							
	8 am							
	12 pm							
	4 pm							
	8 pm							
DAY 2	12 am							
	4 am							
	8 am							
	12 pm							
	4 pm							
	8 pm							
DAY 3	12 am							
	4 am							
	8 am							
	12 pm							
	4 pm							
	8 pm							
DAY 4	12 am							
	4 am							
	8 am							
	12 pm							
	4 pm							
	8 pm							
1) Maintain data for 72 hours after finish of placement. 2) Number of temperature monitoring stations may be increased as needed. 3) Stations shall be located near the outer edges.								